

NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 6, No. 22

November 13, 1975

75-2609



'WORKS IN A DRAWER' — Carl Remenyik, a member of the team responsible for developing the automatic control system for standard blood cell separators, displays the system which was installed in a storage drawer of the machine. The control system improves the speed and operational efficiency of a blood cell separator and enables it to collect about three times as many cells as a manually operated unit.

FTS numbers changing December 1

Effective December 1, the Federal Telecommunications System will be changed from a 10-digit to a seven-digit numbering plan for all on-net calls. An area code no longer will be required. Only the first three digits of present FTS numbers will be changed.

Number plates on plant phones have been, and are being changed, reflecting the change in the numbers. The FTS number will be located on the lower half of the plate and the commercial number on the upper half. During this interim period, the present FTS numbering plan will be used.

New 1976 user guides and Energy Research and Development Administration directories will be distributed prior to the planned

Thanksgiving holidays

Thursday and Friday, November 27 and 28 are official holidays for all Nuclear Division employees. No employee will be required to be at work unless his/her presence is required for continuous operation or plant security.

December 1 conversion, which will contain the new numbers along with additional information.

Questions concerning the changes should be referred to the Materials and Services Divisions in your respective plant.

Bloodmobile returning for last visit in '75

The American Red Cross Bloodmobile returns to Oak Ridge Wednesday and Thursday, November 19, 20 to collect blood. The four visits annually to the Oak Ridge area assure county-wide coverage wherever the need for blood exists.

Also, donors and their families are covered in any section of the country. Many Carbiders are old-time donors and mark three, four and five-gallon marks in their donations.

The hours on Wednesday are from 3 to 6 p.m., and on Thursday from noon to 6 p.m. The mobile unit will be at its usual location, the Armory on the Turnpike.

Laboratory-developed control system helps combat threatening infections

An automated control system for separation of human blood cells, developed by researchers at the Oak Ridge National Laboratory, is now being used experimentally to help combat life-threatening infections in leukemia patients.

The control system is designed to improve the speed and operational efficiency of commercially available, continuous-flow blood cell separators based on the centrifuge principle. It was developed by the Laboratory's Molecular Anatomy (MAN) Program which is jointly supported by the Energy Research and Development Administration and the National Cancer Institute.

Tests in progress

Clinical tests of the automated system, including comparisons of its separating efficiency with an identical, manually controlled unit, are now in progress at the National Cancer Institute in Bethesda, Md., one of the original developers of the blood-cell-separator system. Initial tests show that the ORNL controlled unit collected three times as many cells per hour as the manually operated unit.

Death in human leukemia is most frequently attributable to infections in patients due to a deficiency of granulocytes, the white blood cells which destroy bacteria and yeast that invade the body. Transfusion of granulocytes collected from healthy donors can reverse the usual course of the infection.

To facilitate granulocyte procurement, a continuous-flow blood cell separator was developed in 1967 after three years of collaborative effort by the National Cancer Institute and the International Business Machine Corporation.

Precise control

With this instrument, blood is removed continuously from a healthy donor, passed through a centrifuge to remove the white blood cells, and returned to the donor. In clinical use, it has yielded sufficient white blood cells for effective therapy. However, the yield of granulocytes obtained

with these centrifuges has varied widely from donor to donor and has not been entirely satisfactory.

The system developed by Oak Ridge scientists compensates for this variation and inefficiency by maintaining optimum separation conditions. This is done by precise control of the proportion of blood cells to volume of whole blood (hematocrit) and red blood cell sedimentation; and by replacing the manual controls with an automatic interface detector.

The automatic control system, when added to the standard cell separator, continually monitors the hematocrit of the blood and controls it at a selected optimum value by recycling separated blood plasma. The hematocrit of the packed red blood cell output is measured and automatically controlled by varying the feed blood flow through the centrifuge bowl (rotor).

Design improvements

Patents have been applied for on three new concepts which are embodied in the control system: control of input and output hematocrits as a means of controlling the efficiency of a blood cell separator; utilizing the conductivity of blood referenced against plasma of that same blood as a hematocrit control; and using a photoconduction detector to control the plasma/cell phase interface in a blood cell separator.

An additional step to achieve even greater cell yields has been development of new axial-flow and radial-flow rotors resulting from theoretical studies of blood cell separators. These rotor design improvements reduce shear conditions which cause disaggregation of red blood cells and also reduce turbulent mixing at critical locations within the rotor. The shape of the separation chamber is also improved to optimize separation of blood components.

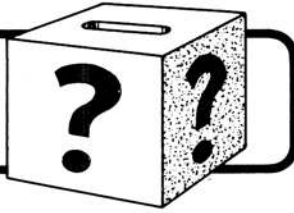
Development team

The development team headed by Julian Breillatt, ORNL Biology Division, has included: Carl J. Remenyik, ORNL consultant and faculty member at The University of Tennessee; Colin D. West, United Kingdom Atomic Energy Research Establishment, Harwell, England, who was a visiting scientist at ORNL for a year; Walter K. Sartory, D. D. Willis, Jerry N. Brantley, John W. Eveleigh, and Lewis Thacker, all of ORNL; William Z. Penland, Bioengineering Unit, National Cancer Institute's Division of Cancer Treatment; Robert G. Graw and Frank Stout, Experimental Hematology Section, National Cancer Institute; Ronald E. McKeighen, who served a presidential internship at ORNL; and Dr. Helen Vodopick, formerly with Oak Ridge Associated Universities.

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QUESTION BOX



If you have questions on company policy, write the Editor, Nuclear Division News (or telephone your question in, either to the Editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

QUESTION: I recently saw an identification card (complete with photograph) of an ORNL employee, identifying him as a Union Carbide staff member. This is an excellent means of identification. Could this service be extended to employees in the other plants?

ANSWER: Nuclear Division identification cards are available, at all installations, to those employees whose work requires frequent travel or who have some other legitimate need for such a means of identification. The request for a card requires approval of your division director or superintendent.

QUESTION: What is the Company policy on leaving the work area at the end of the shift?

ANSWER: Employees are expected to remain at their places of work for the full shift, unless excused or specifically instructed to do otherwise by their supervisors.

QUESTION: Why can't the employees of ORNL reasonably expect to receive the same consideration as their fellow employees at the other installations? At ORGDP, people receive their educational assistance almost immediately upon making application. At ORNL, one waits and waits and waits and waits.

ANSWER: It is true that educational assistance payments at ORNL normally are made by check and mailed to the employee's home address. This does take two or three weeks, depending on the time required for processing the application and the check and the time for mail delivery.

You, however, can get a quicker payment by mailing or taking the necessary papers to the Personnel System and Development Department in Building 2517. You should note on the forms that "cash payment is requested."

QUESTION: Is there a Company policy which requires the supervisor to sign external correspondence, excluding a case where protocol requires an "authorized signature?" The practice is at best demeaning to the individual, and in the long run it can only obstruct communication and erode creativity.

ANSWER: All communications on matters concerning purchasing, contracts, employment, and some other matters have very specific Company channels for authorizations. Aside from this, we require our supervisors to exercise responsibility and control over their assigned departments or groups which could necessitate the supervisor's signature on some particular external correspondence. This policy, however, is not intended for the purpose of a supervisor "taking credit" for work and efforts of a subordinate.

QUESTION: Is it Company policy that an employee off with a nonoccupational illness for 40 days has his/her merit eligibility held up for the number of days off? Is it strictly adhered to in all four of the Nuclear Division Plants? How many days is an employee allowed to be absent before it affects the merit increase. Is previous good attendance ever taken into consideration?

ANSWER: A question similar to yours was answered in this column on March 6, 1975. Time between salary increases is determined by the supervisor. Performance, attention to assignment, and attendance are some of the factors considered. All other things being equal, time between increases is normally extended for accumulation of absences in excess of one month.

APPLICATION FOR TICKETS

Requests MUST Be In By November 26
PADUCAH CARBIDE CHILDREN'S CHRISTMAS PARTY
(For Children Ages 2-10)

SATURDAY, DECEMBER 13th 9 A.M.

Doors will open at 8:30 a.m.
ARCADE THEATRE, PADUCAH, KY.

Employee's Name _____ Badge No. _____

Home Address _____
(Please Print Street Address or RFD, City and Zip Code)

Number of your children who will attend the party (please list):

(BOYS)		(GIRLS)	
NAME	Date of Birth	NAME	Date of Birth
NAME _____	Date of Birth _____	NAME _____	Date of Birth _____
NAME _____	Date of Birth _____	NAME _____	Date of Birth _____
NAME _____	Date of Birth _____	NAME _____	Date of Birth _____

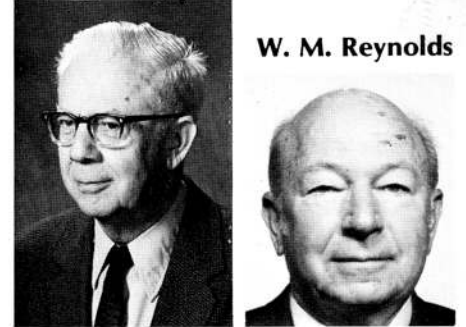
List names, ages and sex of children accurately. This information will be used to bring present records up to date.

NOTE: Fill out form completely and return as soon as possible, but not later than November 26, to the Recreation Office, Union Carbide Corporation, P.O. Box 1410, Paducah Ky. 42001. Tickets will be mailed to parents at their home addresses.

Division Retirees



R. J. Deaderick J. C. Lauderdale Jr.
75-2999 75-2931
75-217



J. S. Culver

Two veterans from the Purchasing Division will be retiring soon. John C. Lauderdale Jr., who joined UCC in 1954, will retire as a contract buyer the end of November. He lives at 118 Porter Road, Oak Ridge.

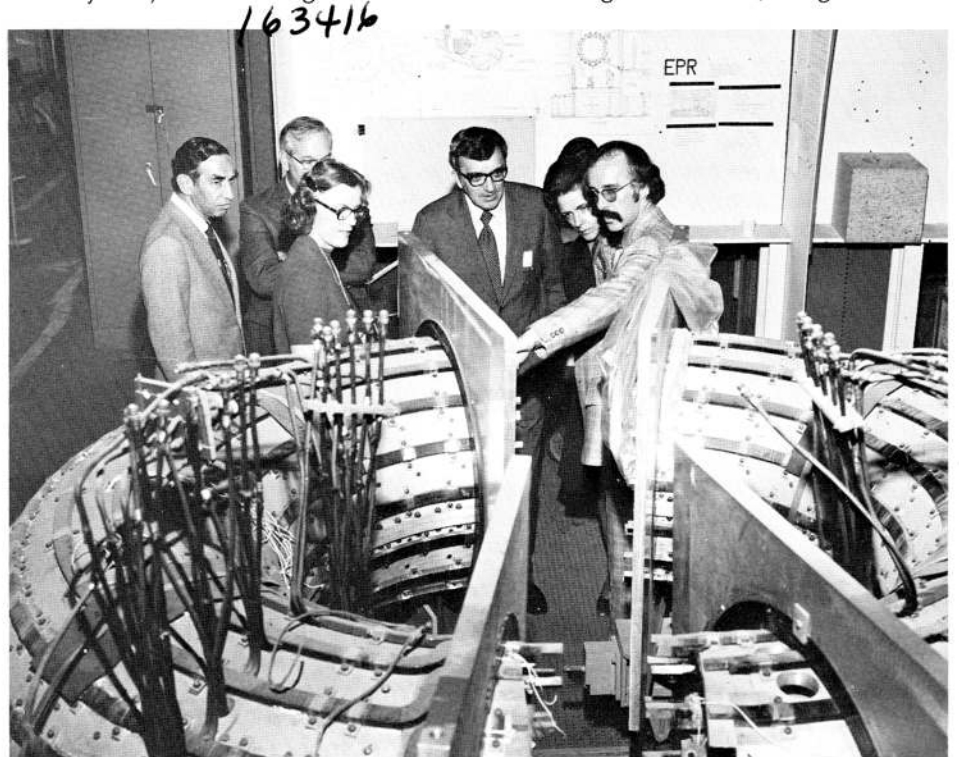
William M. Reynolds, whose company service dates back to 1943, has worked in Y-12, ORGDP, and at ORNL. Reynolds, a purchasing agent, and his wife, Doris, live at 109 Ulysses Lane, Oak Ridge. He will retire at the end of December.

Joseph S. Culver retired at the end of October after more than 32 years with Union Carbide. He was a design specialist in Engineering at ORNL. Culver lives at 110 Carnegie Dr., Oak Ridge.

Ralph E. Deaderick, Engineering Division, will leave UCC on December 31, ending more than 30 years' Company service. He lives at 1220 Dogwood Drive, Kingston.

Market investors meet

Stock investors will be interested in a meeting next week, as David Catlett and Reid Patterson, Merrill Lynch, will present views on market strategy to be used in the coming months. The forum, utilizing the broker firm's projections, is free and does not require reservations. It is set for Tuesday, November 18, at 7:30 p.m. at the Royal Scottish Inn (formerly the Holiday Inn) in Oak Ridge.



CONGRESSMAN McCORMACK TOURS ORNL FACILITIES—John Clarke, director of the ORNL Thermonuclear Division, explains the magnetic confinement system used in the ORMAK fusion experiment, during a recent visit to the Division by U. S. Representative Mike McCormack. From left are Murray Rosenthal, ORNL associate director; Floyd Culler, ORNL deputy director; Mrs. McCormack; Rep. McCormack; U.S. Representative Marilyn Lloyd and Clarke. The group also toured the ORNL energy conservation and nuclear safety vessel facilities which are located at the Y-12 Plant.

N15-216



CORPORATE CONTRIBUTION — Roger F. Hibbs, President of the Nuclear Division, center, presents a check for \$15,000 to the Anderson County United Way campaign. Accepting the Carbide contribution is James Q. Webber Jr., drive chairman for the county, as John W. Arendt looks on from the left. Arendt, who serves as the drive chairman for the three Oak Ridge plants, is manager of the Uranium Resources Evaluation Project for the Nuclear Division, and is currently serving as president of the board of directors for the Anderson County United Fund.

UCC United Way goal goes over the top by 103 percent!

Over the top was the good news from the final report out last week on the Nuclear Division's United Way campaign drive! All three plants in the Oak Ridge area exceeded their goals for the first time in history. The Paducah Plant increased its giving by some 30% this year, with no goal projected, due to the increase in plant population.

Plant-by-plant figures showed pledging as follows:

Plant	Contributed	% of Goal
ORGDP	\$160,459	107
Y-12 Plant	151,619	101
ORNL	185,720	103

Thus, the combined goal of \$480,000 was exceeded, pushing total pledges to \$497,798, or 103% of the total goal! Add to this figure the

Corporate contribution of \$15,000 and the total contribution amounts to \$500,595.

Oak Ridge distribution goes as follows: to Anderson County: \$126,016; to Loudon County: \$22,029; to Morgan County: \$17,779; and to Roane County: \$66,308. These figures reflect that Union Carbide employees are contributing the following percentages to the various county goals: Anderson, more than 68%; Knox, more than 7%; Loudon, 42%; Morgan, 150%; and Roane, 73%; and an additional \$4,979 was pledged to areas outside the five-county area.

New needed share giving increased to over 60% of all employees.

"It was a rewarding drive," John W. Arendt stated. "When we get 100% of all UCC employees contributing through the payroll deduction needed share plan, there will be no need for further drives. It's a goal we can achieve one of these days."

Giving the United Way is the UCC employee's way of saying he cares what goes on in his or her community. And, more important than that, the concern is great enough to motivate that employee to do something about it.



AUGUST RITES — Doris L. Sharp and Meyer B. Herskovitz were married August 2 at the United Church, Oak Ridge. The Rev. Donald W. Goodwin officiated. The bride is employed in Computer Sciences at ORGDP, and the bridegroom is in ORNL's Instrumentation and Controls Division.



ORGDP

RIDE from Holston Hills, Boyd's Bridge Pike area, to Portal 2 or 4, straight day. W. C. White, plant phone 3-3713, home phone Knoxville 255-2510.

Y-12 PLANT

WILL JOIN car pool from Broadacres Subdivision, Powell, to any portal, straight day. Jymme Armstrong, plant phone 3-7767; or Sandra Lattimore, 3-7312.

RIDE from downtown Knoxville to Pine Ridge Portal, straight day. Mae McCravy, plant phone 3-7102.

Paducah Gaseous Diffusion Plant lists seven in new job assignments

Seven promotions are announced at the Paducah Gaseous Diffusion Plant. Joseph H. Alderson, John W. Bridges, Roscoe M. Spiceland and William J. Vaughn are named inspectors in the Engineering Division. Willet C. Johnson and Jack G. Scott have been named fire and guard lieutenants in the Employee Relations Division; and Charles R. Raper has been named a construction engineer in the Engineering Division.

Alderson, a native of Paducah, is attending Paducah Community College. He joined Union Carbide in 1972, and was employed by Dravo-Groves-Newburg in Smithland before then. He and his wife, the former Jean Felts, live at 1744 Harrison St., Paducah, with their two children.

Bridges, a native of Graves County, joined UCC in 1952 after working with the Hayes Freight Lines Company. Prior to that time, he was with a grocery, service station and milk company. Mrs. Bridges is the former Lula Hall. The couple lives at Route 1, Hickory. They have three children.

Johnson, who was born in Celina, Tenn., was employed by the Pet Milk Company before joining UCC in 1951. He and his wife, the former Dorothy Chapman, live at Route 5, Mayfield. They have three children.

Raper, a native of Paducah, worked 32 years with the Atomic Energy Commission, before joining UCC in 1972. He and his wife, the former Louise Gregory, live at 325 Franklin St., Paducah.

Scott, born in Ballard County, has been with UCC more than 24 years. He is a veteran of the U.S. Navy and worked with General Motors Corporation before coming to the Paducah plant. Mrs. Scott is the former Joyce Carning, and they live at Route 1, LaCenter, with their two children.

Joe Arwood is foreman in Plant & Equipment

3205-75

J. E. Arwood

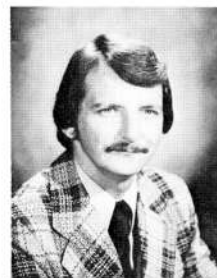


Joe E. Arwood has been promoted to maintenance foreman in Oak Ridge National Laboratory's Plant and Equipment Division.

Arwood joined the Laboratory in 1958 as a millwright and was made a supervisory trainee earlier this year. He served his apprenticeship at Ford Motor Company in Dearborn, Mich.

A native of Knoxville, Arwood was graduated from South High School. In Michigan he attended Henry Ford Community College.

He has one daughter, Victoria Rollins, a refrigeration apprentice in Plant and Equipment Division; and two sons, Joseph Jr., a chemical operator in Operations Division, and James, a student at Roane State Community College. Arwood lives at 100 Virginia St., Kingston.



J. H. Alderson



J. W. Bridges



W. C. Johnson



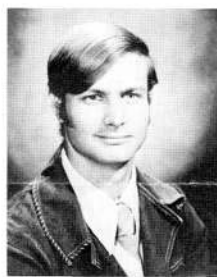
C. R. Raper



J. G. Scott



R. M. Spiceland



W. J. Vaughn

Spiceland, a native of Stewart County, Tenn., has been at Paducah 22 years. He attended Tolars Business College, and worked with Goodyear Aircraft and the Tennessee Highway Department before joining UCC. Mrs. Spiceland is the former Mavis Jacobs, and the couple lives at Route 1, Calvert City. They have four children.

Vaughn, a native of Paducah, worked at the Burger Chef before joining UCC in 1971. He lives at Route 8, Hendron Road, Paducah, with his wife, the former Nancy Purcell. They have one child.

NUCLEAR DIVISION NEWS

UNION CARBIDE CORPORATION
NUCLEAR DIVISION

James A. Young, Editor

Ext. 3-7100

Ruby Miller, Assoc. Editor

Ext. 3-6421

Keith Bryant, Paducah

Bell 369

Doug Carter, ORGDP

Ext. 3-3434

— Member —

INTERNATIONAL ASSOCIATION OF
BUSINESS COMMUNICATORS

Office
Post Office Box Y
Oak Ridge, Tenn. 37830

Elza Community

'To bring them home sooner . . . I'll gladly give up my land'

By JAMES A. YOUNG

(Second in a series covering the communities that made up the pre-Oak Ridge area. Others in the series will include Robertsville and Scarboro. Photos of the communities are needed, and will be returned unharmed after use . . . The editor.)

Elza, that little hamlet on the north side of Oak Ridge, which became the main entry into the Manhattan Project, got its name in a rather peculiar manner.

Paul M. Elza, assistant director for administration for Oak Ridge Associated Universities, relates the following, revealing how Elza got its name.

It seems the Louisville and Nashville Railroad was constructing a bridge across the Clinch River and an underpass near the Dossett community. Elza, a great-uncle of Paul, was construction engineer in charge of the undertaking. Lumber and other materials were marked "Elza" and a shed was built near the present underpass site with the name emblazoned on its side. Thus, railroad employees knew where to leave the materials.

There was never a post office at Elza . . . residents received their mail at Dossett. There was a general grocery store at the crossroads (where River Road and the Turnpike intersect) for years, which was a gathering place for villagers in the old days.

The Elzas were Swiss-German woodworkers who migrated to the East Tennessee area early in the nineteenth century. They never actually lived in the Oak Ridge area, however, settling in Knoxville.

Ridge boundaries

Many natives referred to the area as "Black Oak Ridge," which runs alongside the northern boundary of the area. Thus, the Manhattan Project was bounded on the north by the L & N Railroad, on the east and south by the Clinch River, and on the west and north by the ridge.

The 59,000 acres condemned by the U. S. Government in the summer of 1942 encompassed the land to be known as Oak Ridge. Ed Browder, a

Roane County industrialist and former resident of the Wheat area, received condemnation papers simply marked "Ed Browder, et al." He still has the historic document in his possession. Residents were given until the first of the year (1943) to vacate their land. Some 1,000 land-owners (about 3,000 people) were quietly moved from the hollowed-out valley.

(It was July 1, 1942, that Army engineers visited the area and decided that the "Elza Area" would be a suitable site for the super secret wartime project, known then merely as S-1.)

Worthington settlers

The valley was largely wooded with fertile farms along the valley and river, with relatively few families living on the 59-square-mile site. Many residents were on lands settled by their Scotch-Irish ancestors, handed down by three and four generations of farmers and trappers.

The Worthington Cemetery, which nestles in the bend of the river to the east of Elza, is the resting place for many of the area's earlier settlers. Birthdates on some of the stones go back into the 1700's, among them Garner, Leath, Worthington, Edmonds and Duncan names.

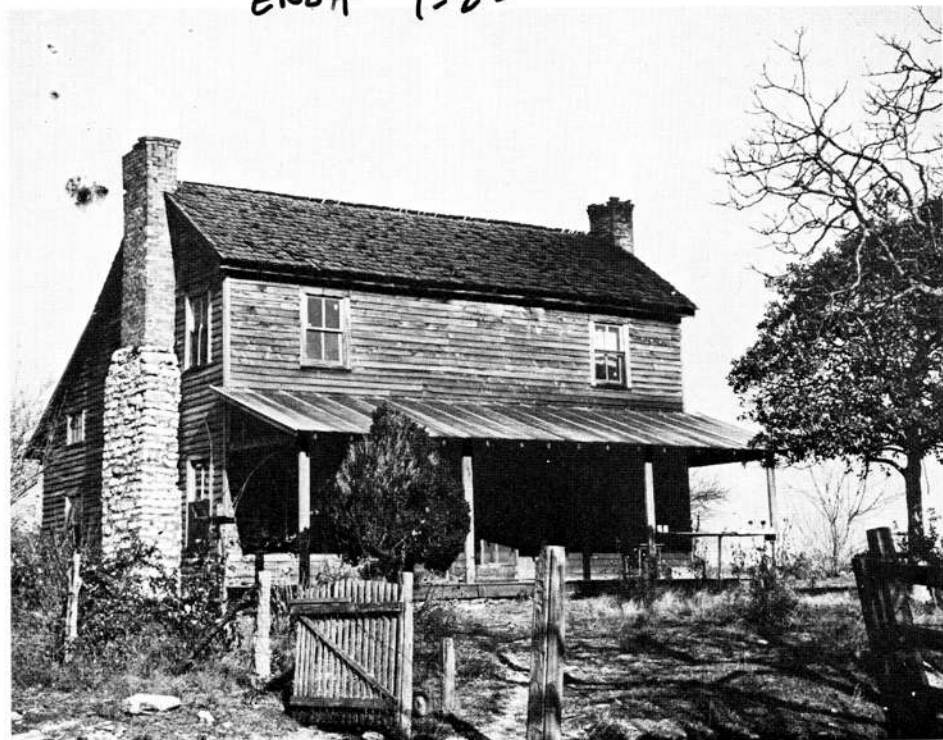
Directly across the Clinch River was the County "poor farm," where indigents from Anderson County spent their last days. Poor farms are only dots on the map these days, as cemeteries mark their locations of an era where poverty took its toll.

Way of life

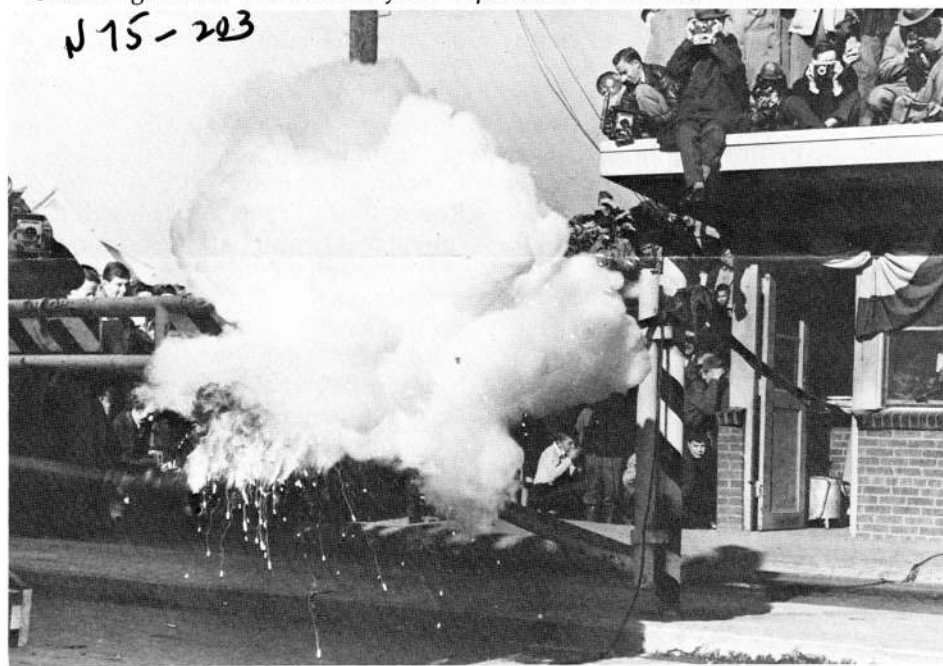
Squaredancing, pie suppers, and homecomings marked the social activities of the early residents, the church being the hub of it all. The country store also marked a gathering place where villagers congregated for the world news and community gossip. It was here also that small children brought eggs to barter for a piece of candy and pick up a spool of thread, or coffee or salt for the family board. Much of the food was grown by the residents themselves, and summer was a busy time when canning and storing away were a way of life.

A fascinating story of the prediction of "things to come" is told in George R. Robinson's book, "The Oak Ridge Story." It seems an old prophet from the Elza area, John Hendrix, had a vision after fasting for 40 days in the Black Oak wilderness.

There is actually little written of Hendrix's predictions, but word-of-mouth stories, told and re-told in the crossroads store, tell of great buildings and factories to be built in Bear Creek Valley (the present site of the Oak Ridge Y-12 Plant) that will "help in winning the greatest war that ever will be." Hendrix died in 1903 and his grave was marked a couple of years ago by enterprising Oak Ridge High School students. The simple handmade stone was replaced.



OLD HOMESTEAD — The Worthington home stood near Elza and was typical of structures in the area before Oak Ridge was founded. The stone-brick chimneys and cedar-shake roof were typical of houses in the Black Oak Ridge area. The fenced yard kept cattle from near the house.



GATES OPEN WITH A BANG — Elza Gate passes into non-existence in 1949 as the security was lessened to allow visitors into town for the first time. Symbolic of the tight security, Elza Gate was the main entry into the Manhattan Project during the World War II.

Some 3,000 people were moved from the Oak Ridge area, and around the Elza section were the Crosses, Pyatts, Freels, Tadlocks, and Tunnells. (William Tunnell was the first settler to arrive in what is now Oak Ridge, settling in 1792.) Later came the Howards, the Freels, the Peaks, Lees and Garners. A member of the Garner family migrated on to Texas to sire John Nance Garner, former vice-president.

William C. Tunnell, in the Engineering Division at Y-12, is a direct descendant of the Virginian who came to East Tennessee a decade after the Nation's founding. Hilton A. Tunnell, whose name is pronounced "Tun' nel," as the subterranean passageway, believes he also came from that family tree. One of the old Tunnell ancestral homes stands near the Laurel and Marlow communities, just outside the Oak Ridge area.

Country store

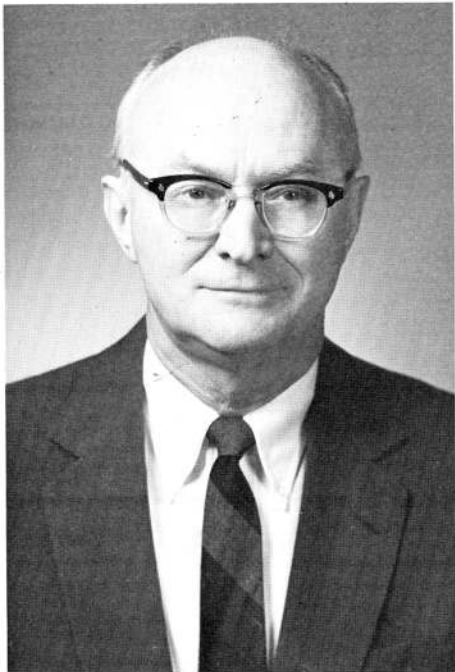
Copeland's store, which stood at the crossroads, was the center of the

Elza community. Many Copelands still exist in the area. A Copeland owned land to the east of Elza on Clinch River, which is now the site of Emory Heights. A Freels family owned river property along that way also. Many descendants and relatives of these families still live in the surrounding areas.

One of the residents was quoted as saying, "I was born in the house my grandfather built back in 1846 (when the United States and Mexico began war). This is mighty pretty country around here — the Great Smoky Mountains to the east and the Cumberland Mountains to the west. Don't blame my grandfather a bit for settling here.

"All the folks in these parts were farmers. They worked the ground and minded their own business, peaceful folks living a simple life. Of course, the Civil War came along, we sent a few of our boys out to fight. And then in World War I we did our share. But

(Continued on page 8)



PIONEER BLOOD — William C. Tunnell, a long-time Y-12 employee, is directly descended from another William Tunnell who migrated from Virginia to settle in the Black Oak Ridge valley in 1792.

2815/1

Accident claims life of M. E. Scarborough

Michael E. Scarborough, Y-12 Assembly Division, died October 25 while on a fishing expedition on Watts Bar Lake.



Mr. Scarborough

A native of Roane County, he came to Y-12 in 1969, after working with Harriman Motor Company. He attended East Tennessee State University, and was attending Roane State Community College.

Survivors include his wife, Vicki Crass Scarborough; son, Timothy, at Ladd Estates, Harriman; parents, Mr. and Mrs. B. E. Scarborough; and a brother, Marshall Scarborough.

Services were held at Kyker Funeral Chapel, Harriman, with the Rev. John L. Shepherd officiating.

November 1 services for T. E. Duff, ORNL foreman

Thomas E. Duff, a maintenance foreman in Plant and Equipment Division at Oak Ridge National Laboratory, died October 30 at Ft. Sanders Hospital in Knoxville.



Mr. Duff

Mr. Duff, who made his home in Eatons Community, Lenoir City, had been with the Laboratory since 1955. He was a native of Loudon County.

He is survived by his wife, Mrs. Dora Walker Duff; his parents, Mr. and Mrs. Robert F. Duff; a sister, Mrs. Alice Mayes; and a brother, Gerry Duff.

Services were held November 1 at Click Funeral Home Chapel, Lenoir City, with the Rev. J. L. Ward and the Rev. Fred Gooden officiating. Burial was in Lenoir City Cemetery.

Laboratory machinist, John Oliver dies in Oak Ridge

John E. Oliver, a machinist in Oak Ridge National Laboratory's Plant and Equipment Division since 1951, died October 31 in Oak Ridge Hospital.



Mr. Oliver

A native of Erwin, Tenn., Mr. Oliver lived at 104 Paoli Lane, Oak Ridge.

He is survived by his wife, Mrs. Muff Lacy Oliver; a daughter, Mrs. Dianne Morton; a brother, Harold Oliver; a sister, Mrs. Mary Lee Rowe; two grandchildren, and three great-grandchildren.

Funeral services were held November 2 in First Christian Church, Oak Ridge, with the Rev. C. Edward Webber officiating. Burial was in Oak Ridge Memorial Park.

Margaret Albritton, ORNL Technical Publications, dies in Alabama November 5



Miss Albritton

Margaret Albritton, a technical reports assistant in the Information Division, Oak Ridge National Laboratory, died November 5 in the Andalusia Memorial Hospital, Andalusia, Ala.

Miss Albritton, a native of Alabama, joined Union Carbide's Oak Ridge staff in 1951. She was quite active in the National Secretaries Association (NSA) and has held office on both the state and national levels. Her activities also include work with the Arts Council of Oak Ridge.

She made her home at 144 Georgia Avenue, Oak Ridge.

Miss Albritton is survived by six brothers, William H. Albritton, Robert B. Albritton, John T. Albritton, J. Marvin Albritton, D. P. Albritton and Jesse T. Albritton; and two sisters, Mrs. D. E. (Appie) Terry and Mrs. Ned (Mary) Cabaniss.

Services were held November 7 at the First Presbyterian Church in Andalusia, followed by burial in Andalusia.

PATENT GRANTED

To Calvin C. Wright, Ralph R. Wright and George S. Petit, Oak Ridge Gaseous Diffusion Plant, for "Electro-Galvanic Gold Plating Process."

NUCLEAR DIVISION SAFETY SCOREBOARD

Time worked without a lost-time accident through November 6:

Paducah	45 Days	470,000 Man-Hours
ORGDP	50 Days	999,753 Man-Hours
ORNL	213 Days	4,478,769 Man-Hours
Y-12 Plant	38 Days	1,024,000 Man-Hours



QUALITY ASSURANCE WORKSHOP—Twenty-four participants from Goodyear Atomic Corporation, the Oak Ridge Gaseous Diffusion Plant, the Y-12 Plant, Oak Ridge National Laboratory and the Paducah Gaseous Diffusion Plant attended a five-day workshop recently in Y-12 on quality assurance. The workshop was sponsored by the QA Program, Officer of Director, ORNL.



ACES WORKSHOP—About 60 representatives of business, industry and government attended a two-day workshop on the ORNL-developed Annual Cycle Energy System in Oak Ridge recently. Eugene Hise, Energy Division, addresses the group during a tour of the pilot ACES experiment located in the Conservation Laboratory at the Y-12 Plant. The workshop, aimed at exploring the commercial potential of the new energy conservation system, was coordinated by the Nuclear Division's Industrial Cooperation Program.

Calendar of EVENTS

TECHNICAL November 14

Energy Division Seminar: "Current ERDA Geothermal Programs," R. N. Lyon. Building 3047, Room 126, 10 a.m.

Theory Seminar: "Optical Resonance of a Two-Level Atomic System," M. H. Nayfeh. Building 3047 Auditorium, 10:30 a.m.

Chemistry and Physics Divisions Joint Seminar: "What is New with Solar Neutrinos," Raymond Davis Jr., Department of Chemistry, Brookhaven National Laboratory. East Auditorium, Building 4500N, 3 p.m.

COMMUNITY November 16

Oak Ridge Civic Music Association

Coffee Concert: Jim Allen, organist; Charles Parker and Jim Lassen, piano-bassoon duet. First Presbyterian Church, 8:15 p.m. Admission free.

Children's Museum: "An Afternoon with Homer Ledord and His Dulcimer." 2-4 p.m. Admission free.

November 21-22

Oak Ridge Community Playhouse: "Arms and the Man." Playhouse 8:20 p.m. Admission: adults \$3; students \$1.50 (Fridays only).

November 22

Oak Ridge Civic Music Association: The Oak Ridge Chorus, Stephen Young, Conductor. First Methodist Church, 8:15 p.m. Admission: adults \$3.50; students \$1.75. (Arts Council vouchers may be used.)

November 23

Oak Ridge Community Art Center Film Club: "Day for Night," producer Francoia Truffaut, 1974. Jefferson Junior High School Auditorium, 8 p.m. Admission: adults \$1.75; students \$1.

Children's Museum: "A Visit to Mao's China," with Dick Smyser. 2-4 p.m. Admission free.

RECREATIONNOTES

ORNL BOWLING

The Dynamics dominate rolling in the A League, as the Half Frames bowled hot recently, posting a 3217 series. The top teams' S. R. Smith rolled a 719 handicap series, blasting all records.

The Cellar Dwellers keep their top rung in the C League through October, about six points in front of the Remkeys, as the Damagers breathe heavily in third place. The C.D.'s R. L. McCulley rolled a 646 handicap series to pace bowlers late in the month.

The Challengers and Oops teams are tied for first place in the Carbide Family Mixed League, as Del Ducay, 612, and Tillie Plaza, 495, pace bowlers. Patricia Reece recently rolled a 505 scratch series.

In the Ladies' League it's still the Mousechasers eluding most contenders, seven ahead of the Coolettes. Brena Stevens rolled a 226 scratch game, and Elizabeth Phipps posted a 642 handicap series the last night of action in October.

Y-12 BOWLING

The Goofers lead the Y-12 Mixed League by one point, ahead of the Rollers and the Friskies. The Splinters follow by a point behind those two. Bill Butturini rocked the alleys last week, putting a 672 handicap series way up on the boards.

The Ridgers have a four and one-half point lead in the Classic League, as the Markers, Eightballs and Rebels come in close. Bill Reynolds' 711 handicap series stands atop the rolling. Joe Morgan's 279 single is in there, too.

The C League sees the Rounders only one point ahead of the Mini-Strikes, who are only one-half point away from the Sunflowers. Edd Sise's 690 handicap series is still high on the list.

VOLLEYBALL LEAGUES

Three big Volleyball Leagues fired opening guns recently, as 28 teams face the firing squads.

League standings follow:

NUCLEAR LEAGUE		
TEAM	WON	LOST
1. Rad-Fizz	11	1
2. Over-The-Hill Gang	9	3
2. Pogo's	9	3
4. Computes	8	4
5. Artie's Army	6	6
6. Sloths	5	7
7. Maxwell Demons	3	9
7. Lucky Spikes	3	9
9. Wolfpack	0	12

ATOMIC LEAGUE		
TEAM	WON	LOST
1. Diggers	11	1
2. Taxi Squad	13	2
3. Sportsmanship	8	4
4. Quarks	9	6
5. Old Men	4	8
6. Ecomen	3	9
7. Shooting Stars	3	12
8. Electric Bananas	0	9

CARBON LEAGUE		
TEAM	WON	LOST
1. The Ball Busters	12	3
1. The Group	12	3
3. The Skinks	9	3
4. Hawks	11	4
5. Sud Soakers	9	6
6. Gauss House Gang	9	9
7. "Are You Sure"	8	10
7. Odds & Ends	8	10
9. The Smashers	4	11
10. The GLCA Students	5	13
11. Rinkey Dinks	0	15

ORGDP's Early Days

Construction of the Oak Ridge Gaseous Diffusion Plant — then named K-25 — started September 10, 1943, and the first units for the production of uranium 235 began operating February 20, 1945. The peak wartime operating force for this process was about 12,000.

Application for Tickets
To
Oak Ridge Christmas Parties
FOR CHILDREN OF UNION CARBIDE EMPLOYEES
(AGES TWO-10 ONLY)
TUESDAY, DECEMBER 23

Plant

Employee's NameBadge No.....

Home Address

Plant Address

Number of Tickets (Children)

Number of Tickets (Adults)

— CHECK TIME PREFERRED —

Tuesday, December 23 9 A.M. 11 A.M. 1:00 P.M.

3:00 P.M.

Please check first and second choice (write in space "1" or "2") as only a limited number of tickets will be issued for each party. Preference will be given early applicants and if tickets for first choice are exhausted, tickets for second choice will be issued.

Return this form, properly and completely filled in, to the Carbide Recreation Office, Building 9711-5 Stop 1, Y-12 Plant. Please apply for tickets before December 18. The required number of tickets will then be mailed to parents at their home or plant addresses.

NY CITY TUG — Conrad Richter took "best of show" in the Camera Club's recent competition. The startling photo took first place in black and white prints, then went on to take the top honor. Richter is in ORNL.

K-25
PRESENTS

The Magical Moods
of Christmas

OAK RIDGE CIVIC CENTER
DECEMBER 13, 1975
SOCIAL HOUR 8:00 - 9:00 PM
CHRISTMAS CHEER & HORS D'OEUVRES
DANCE 9:00 - 1:00 AM
FEATURING "BLACKWATER"
ALSO APPEARING JUDI HEMBREE
AND THE SECOND CENTURY

\$5.00 PER PERSON
LIMITED TICKET SALES
NO RESERVED TABLES

Safe Holidays are Happy Holidays

The following employees will provide tickets for the ORGDP dance:

Division	Representative	Telephone	Building	Mail Stop
Barrier Manufacturing	Mike Willard	3-2222	K-1037	349
Capacity Expansion	Mary Bailey	3-3363	K-1001	196
Computer Sciences	Betty Kemper	3-3833	K-1007	069
Employee Relations	Karen Lee	3-3295	K-1001	137
Engineering	Joyce Irving	3-3651	K-1001	166
Fabrication & Maintenance	Mary Grubb	3-9225	K-1035	217
Finance, Materials, Services	Janie Bryant	3-3450	K-1036	207
Gaseous Diffusion Development	T. A. Angelelli	3-3498	K-1004-A	428
General Accounting	Dorothy Gordon	3-3117	K-1007	057
General Auditing	R. C. De Binder	3-4693	Townsite	601
General Purchasing	Opal Waller	3-4264	Townsite	601
Laboratory	Mae Musick	3-9622	K-1004-A	431
Operations	W. D. McCluen	3-3325	K-303-8	335
Operations, Analysis & Planning	Faye Duncan	3-3186	K-1001	189
Security and Plant Protection	Harry Sartelle	3-3288	K-1020	401
Separation Systems	Evelyn Cole	3-3545	K-1005	257
Shift Operations	R. L. Newton	3-3282	K-303-7	343

PADUCAH MISTLETOE BALL

The Paducah Plant has chosen Friday, December 5, as the big day for the annual Mistletoe Ball. It will be held from 9 p.m. to 1 a.m. at the Paducah Civic Center.

Music will be furnished by a Louisville aggregate, called "The Dynasty," eight musicians playing 13 instruments, which is a neat trick in itself. A female vocalist also is featured.

Tickets will go on sale November 20 for employees and escorts, and may be purchased for other guests the first week of December. Division representatives and the Recreation Office will have tickets for this outstanding event.

ORGDP BOWLING

Tuesday League has a temporary hold on its action with the All Stars six and one-half points in a comfortable lead. B. G. Human rolled a 223 game recently and Loyd Kahler posted a 648 handicap series.

The Wednesday League sees the Amps sooner in first position, with the Sues Sooners, Losers and Demons in second place. Jim Winger rolled high of 243, 666 recently.

The ORGDP's Women's League is held by the Starlites, seven out front. Patsy Martin fired the lanes in late October with scores of 206, 231 and 208 for a series of 645!

The Medicine Chest



By T. A. Lincoln, M.D.

QUESTION: "I recently read an article which warned against the risks of a fatal coronary heart attack while jogging. We know you are biased since you jog, but what can you tell us about the risks versus the benefits?"

ANSWER: I admit my prejudice, but do those who ridicule fitness recognize theirs? Fat physicians generally don't push weight control. Smoking physicians tend to minimize its risks. Sedentary physicians derive comfort from articles which support their physical laziness.

The risk of having a fatal heart attack during any activity depends roughly on how much time you spend in that activity. In a study done in 1937, the activity of 1,108 victims before their fatal attacks was carefully reviewed. Fifty-two percent of the attacks occurred while sleeping or at rest, 21 percent during mild routine activity, 16 percent during walking and 9 percent during moderate exercise. Only two percent occurred during prolonged or strenuous exertion. Even though fatal heart attacks occur while sleeping, while eating and during sexual relations, no one suggests that these activities be avoided.

Oxygen deficiency

The risk with any activity depends on the severity of the underlying pathology. When the circulation to the heart muscle is impaired because of a narrowing of the coronary arteries, the muscle may not get enough blood and therefore not enough oxygen during strenuous exercise. At such times, electrical disturbances may occur, which could cause a fatal fibrillation. In general, the risk is probably proportional to the relative oxygen deficiency and the previous experience of the muscle. If a sedentary individual with narrowed coronary arteries jogs hard enough to create a severe oxygen deficiency, he could have a fatal heart attack. If that individual had regularly jogged and gradually conditioned his heart muscle to moderate degrees of oxygen deficiency, then the risk probably would be small.

The benefit of regular vigorous physical exercise was strongly supported in a recent study of longshoremen in San Francisco. Dr. Ralph S. Paffenbarger from the University of California School of Public Health reviewed death certificates and medical and laboratory histories on 6,351 men who were 35 or more at the time of employment and were followed 22 years, or until they reached age 75. By union contract, the length of rest periods were based on whether the job involved heavy, moderate or light activity. Because of

the contractual arrangement, it was believed that the division into heavy, moderate or light work was followed closely both by the workers and the management. The specific energy requirements of 49 different jobs were studied by measuring oxygen consumption while actually performing typical jobs.

Activity vs death rate

Five hundred and ninety-eight deaths occurred. The age adjusted death rate for the heavy workers was 26.9 per 10,000 work-years and for the medium and low activity workers it was 46.3 and 49.0. The difference was especially impressive when only sudden deaths were considered. These were defined as deaths occurring within one hour after the onset of the attack. The death rate was over three times higher in moderate and light activity jobs. These differences persisted even when the effect of other risk factors such as smoking, high blood pressure, weight, etc., were taken into account. Leisure time activities were remarkably sedentary in all the longshoremen, so were not thought to influence the results.

Regular leisure time physical exercise may not be sufficient to offer the protection a heavy physical job seems to provide. The benefit may be in reducing other risk factors such as obesity, high cholesterol and triglyceride levels, blood pressure and psychological stresses. Regular leisure physical exercise may play only a modest role in preventing heart disease but it does appear to help in survival after an attack has occurred. Most people who exercise say they feel better, so if it is done carefully, it provides its own continuing justification.

QUESTION: "I recently read that regular checkups are worthless. What do you say?"

ANSWER: I wouldn't be in the periodic physical examination business if I thought they were worthless. The cynic who claims that they are worthless probably has been remarkably unsuccessful in getting his patients to alter their life styles to prevent disease. If checkups only record the gradual deterioration of health as the years go by, then they are probably worthless. If they lead to action to enhance a person's health, then they are beneficial in improving at least the quality of life. Being certain they always increase longevity is of less importance. In two diseases, findings at routine physical examinations have led to improvements in national vital statistics. Deaths from heart failure and strokes have decreased due to better control of high blood pressure often first detected during a routine physical examination. Cancer of the cervix now claims many fewer lives because of the Pap test routinely performed on all women. Other examples could be cited.

The periodic physical examination is admittedly an inefficient procedure since the number of significant new



PUPPETS IN CHRISTMAS SHOW — Danny and Margie Baker are seen with their puppets that will appear in the Oak Ridge Christmas parties for Union Carbide children, Tuesday, December 23. Parties are set at 9 and 11 a.m., and 1 and 3 p.m. An application for tickets appears elsewhere in this edition.

Children parties set in Paducah, Oak Ridge for employees' bairn

Four parties will be held for children of Union Carbide employees on Tuesday, December 23. The scene will be the Oak Ridge High School auditorium, the same as usual. Special acts this year will include Danny and Margie Baker with their famous puppet act.

Austinini will be there also to do his sleight-of-hand magic for the kids. Santa, caroling and treat packages for each child will round out the bill, as well as the usual cartoons.

Bimonthly Colloquium set for November 18

Oak Ridge National Laboratory's next Bimonthly Colloquium will be held on Tuesday, November 18, at 3:30 p.m. in the Central Auditorium of Building 4500N. Dan Robbins, head of professional and university relations, will speak on "Long-Range Plan for Human Resources, 1976-1981."

Closed-circuit TV coverage will be available in the East Auditorium in the event the Central Auditorium is filled.

Following Robbins' presentation, Laboratory Director Herman Postma will comment on "Factors in and Commitments to the Human Resources 4-Year Plan," after which he will answer questions from the floor on that and other topics. Signed questions may be submitted in advance to Truman D. Anderson, Building 9201-3, Mail Stop 2, Y-12.

Bus transportation for staff members located in Y-12 will leave the Thermonuclear Division parking lot at 3:05.

The next issue will be dated November 27. The deadline is November 19.

findings is small. The question, then, is what value to put on a life. Is it worth trying to save or improve? The statistical cynics and accountants say no. What do you say?

Hours of the parties will be 9, 11 a.m., 1 and 3 p.m. Ticket application should be made shortly to assure receiving desired times. An application appears elsewhere in this edition of the *Nuclear Division News*.

There is no admission charge, but children as well as accompanying adults will need tickets.

Applications will be accepted until December 18. No tickets will be mailed out after that time and will have to be picked up in person at the Recreation Office, Building 9711-5, Y-12.

Information on the parties may be obtained by calling Recreation, extension 3-5833.

Puppets will also be featured in the party for children in the Paducah area. The doors open at 8:30 a.m. at the Arcade Theatre, Saturday, December 13. There will be the usual cartoons, carolling, and a visit from Saint Nick.

The party begins at 9. A ticket application for parents at the Paducah Plant appears on page 2 of this issue of the *Nuclear Division News*. Applications for parents in the Oak Ridge area appears on page 6. Tickets for accompanying parents are also required.

**Thanks to you
it works...
FOR ALL OF US**



United Way



COUNTRY STORE — The interior of a store in the Oak Ridge area, when cokes were still a nickel, is seen in the above vintage photograph. It would be interesting to see some of the prices on the shelves behind the proprietor.

Elza Community

(Continued from page 4)

other than that, we didn't pay much attention to the outside world and they didn't bother with us. That was up to 1942, anyway, when one day a man came to our house and said he was from the Government. 'We're going to buy up your land,' he said to me. 'All of it?' I asked. 'Yes sir,' he said, 'we're going to buy all the land in this section. Everyone has to go.'

'For winning the war'

"Well, I went outside the house with the visitor and looked around me ... up at the green hills my grandfather had come across 100 years earlier, and I looked at the farm I'd worked for half a century. I asked the visitor what the Government was going to do and he said he didn't rightfully know, but it was for winning the war. I had three sons in service —

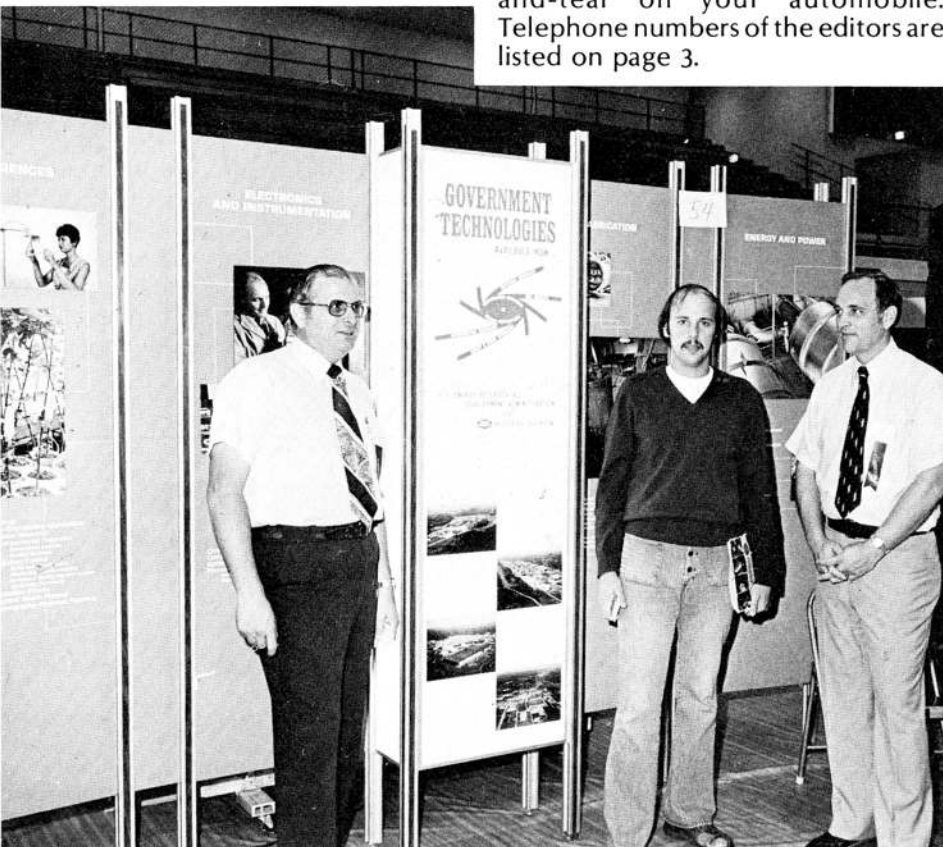
two overseas — and I figured if giving up my home and my land would help bring them home sooner, I'd be happy to do it."

It was March 19, 1949, when Elza took another role in history, as the gates were opened, declaring Oak Ridge an "open city." A pulse of power from an Atomic Energy Commission pile burned the ceremonial ribbon, symbolizing the opening of the gates.

Elza had come a long way from the sleepy little community nestled beneath the pines and oaks of Black Oak Ridge. The name Elza had passed into history, to make way for the name "Oak Ridge," which was to occupy a larger part of history.

RIDES-RIDES-RIDES

If you wish a ride, or wish to join a car pool, give us a call. Car pooling saves you money, effort, and wear-and-tear on your automobile. Telephone numbers of the editors are listed on page 3.



INDUSTRY DAY ACTIVITIES — Paducah employees Eugene P. Larson, left, and James H. Renfro, right, flank an unidentified University of Missouri-Rolla student in the school's annual Missouri Industry Day. The Industrial Cooperation display is seen in the background. Walter L. Ries, chairman of the activities at Rolla, expressed the school's thanks for the part they (Larson and Renfro) played in making it a success.

COMPANY Service

20 25 30

LABORATORY 30 YEARS

Clarence R. Johnson, Plant and Equipment; George F. Blankenship, Laboratory Protection; James H. Morgan, Norman L. Beeler and Theodore Sylvia, Plant and Equipment; Floyd R. Wilkerson, Biology; Bertie F. Byrum, Metals and Ceramics;

Beatrice R. Huffman, Employee Relations; George H. Scott and Nelson E. Wilkins, Plant and Equipment; Earl C. Moore, Thermo-nuclear; Floyd G. Banks, Laboratory Protection; James H. Davidson, Analytical Chemistry;

Robert B. Waters and Clyde D. Watson, Chemical Technology; James H. Knox, Instrumentation and Controls, and Clyde Scott, Laboratory Protection.

25 YEARS

Garland Samuels Jr., Robert E. Coleman, Edward W. Hagen, Thomas L. Hudson, Peter Patriarca, Arthur M. Frazier, Avery E. Buckner, C. Ross Grubb, Neil M. Atchley, Frederick E. Lynch, James S. Woodard;

Joseph L. Fowler, Martha W. Gerrard, Evelyn D. Williams, Carl S. Harper, Clarence E. Mashburn and A. Lou Gunnels.

20 YEARS

Carl D. McNutt, William H. Longaker, Mildred M. Payne, Charles E. Thacker, Thomas A. Herrell, Robert A. Cunningham Jr., Nathaniel W. Hill and Glenn W. Greene.

ORGDP 30 YEARS

Fletcher F. Keylon, project maintenance department; James H. Clay, power and utilities maintenance; John S. Magill, maintenance heavy equipment department; Woodrow W. Beason,

Sports Fishing Institute commends ESD's Coutant

Charles C. Coutant, director of the thermal effects program in the Environmental Sciences Division, Oak Ridge National Laboratory, has received a commendation award from the Sport Fishing Institute for an address he presented at the National Symposium on the Biology and Management of Centrarchid Bases, sponsored by the Institute earlier this year in Tulsa, Okla.

Coutant presented a critical review of the requirements and effects of temperature for Centrarchid bases, in which he noted that full understanding of the bases' thermal requirements and behavior is essential to proper design of thermal discharges and effective management of bass populations. Coutant's paper was entitled "Responses of Bass to Natural and Artificial Temperature Regimes."

The Centrarchid bases include largemouth, smallmouth and spotted bases.

utilities operations administration; Paul D. Harris, grounds maintenance department; Bert M. Kelly, TIA barrier manufacturing; Richard W. Ulm, Engineering Division; John G. Vance, TIA barrier manufacturing; Virgil Janoe, converter shop; William H. Davy, Engineering Division; James E. Pope, technical evaluation department; and Trent Bridges, grounds maintenance department.

25 YEARS

Hurd J. Hulin, Alvin E. Hill, Solan W. Fiveash, William W. Smith, William H. Harvey, John H. Boggs, Kenneth T. Ziehlke, Joseph Burch and Robert B. Neal.

20 YEARS

Joe C. Feeman and Billie L. Evans.

GENERAL STAFF 25 YEARS

Wilton R. Osborn Sr., Purchasing Division; and Julius M. Gregg, Auditing Division.



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